

## DOCUMENT RESUME

ED 229 613

CE 035 973

**TITLE** National Apprenticeship and Training Standards for Carpentry. Revised.

**INSTITUTION** Employment and Training Administration (DOL), Washington, DC. Bureau of Apprenticeship and Training.

**PUB DATE** 82

**NOTE** 42p.; Prepared and approved by the National Joint Carpentry Apprenticeship and Training Committee.

**PUB TYPE** Guides - Non-Classroom Use (055) -- Legal/Legislative/Regulatory Materials (090)

**EDRS PRICE** MF01/PC02 Plus Postage.

**DESCRIPTORS** Agency Cooperation; \*Apprenticeships; Building Trades; \*Carpentry; Cooperative Programs; Definitions; \*Employment Patterns; Equal Opportunities (Jobs); \*Federal Legislation; Federal Regulation; \*Job Training; Labor Legislation; Labor Standards; Legal Responsibility; Occupational Safety and Health; Recordkeeping; Records (Forms); Recruitment; School Districts; Skilled Occupations; Student Certification; Taxes; \*Trade and Industrial Education; Veterans; Work Environment; Work Experience

**IDENTIFIERS** National Standards

**ABSTRACT**

Designed to guide local organizations of contractors and journeymen in establishing and improving local apprenticeship systems, this booklet contains the latest revision of the National Joint Carpentry Apprenticeship and Training Committee standards pertaining to the basic requirements for effective apprenticeship. In a section on adapting national standards to local use the following topics are addressed: formation of the local carpentry joint apprenticeship and training committee; duties of the joint committee; filing with registration agencies; cooperating agencies; the definition of apprenticeship; qualifications for apprenticeship; apprentice recruitment, selection, employment, and training; terms of apprenticeship; credit for previous experience; related school instruction; apprenticeship agreements; probationary periods; wages; periodic evaluation; hours of work; work experience; the transfer of apprentices; certificates of completion of apprenticeship; safety and health; adjusting differences; legal conflict; registration; deregistration; and modification of standards. Discussed next are various federal laws and regulations affecting the employment of apprentices, including apprentice wage determination regulations, veterans readjustment legislation, wage and hours regulations, and equal employment opportunity legislation and regulations. The final two sections deal with joint training funds and apprenticeship records. Appended to the standards are schedules of work experience and instruction in the following occupational areas: carpenter, millwright, cabinetmaker, piledriver, interior systems installer, and floor and wall covering installer. (MN)

# National Apprenticeship and Training Standards for Carpentry



U.S. Department of Labor  
Raymond J. Donovan, Secretary

Employment and Training Administration  
Albert Angrisani  
Assistant Secretary for Employment and Training

Bureau of Apprenticeship and Training,  
Revised 1982

ED229613

U.S. DEPARTMENT OF EDUCATION  
NATIONAL INSTITUTE OF EDUCATION  
EDUCATIONAL RESOURCES INFORMATION  
CENTER (ERIC)

This document has been reproduced as  
received from the person or organization  
originating it.

Minor changes have been made to improve  
reproduction quality.

- Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

Prepared and approved by the National Joint Carpentry Apprenticeship and Training Committee, representing the Associated General Contractors of America, the National Association of Home Builders of the United States, and the United Brotherhood of Carpenters and Joiners of America, in conformance with the basic standards recommended by the Bureau of Apprenticeship and Training, U.S. Department of Labor.

## PREFACE

Techniques and standards of work have been developed in the field of carpentry that are of great economic importance.

To assure that these standards are followed in all branches of the trade, to increase their vitality and effectiveness, and to promote uniformity of practice, national apprenticeship and training programs have been formulated by the National Joint Carpentry Apprenticeship and Training Committee, representing the United Brotherhood of Carpenters and Joiners of America, Associated General Contractors of America, and National Association of Home Builders of the United States. The Bureau of Apprenticeship and Training, U.S. Department of Labor, has assisted in developing the programs.

This booklet contains the latest revision of these standards, which cover basic requirements for effective apprenticeship and are offered to guide local organizations of contractors and journeymen in establishing local systems of apprenticeship and improving existing systems.

The national joint committee has tried to include in the revised standards the most up-to-date concepts of training. Its objective is to bring about greater uniformity and higher standards of efficiency and service for those entering the field, whatever the branch or locality. Further, it aims at encouraging more journeymen to take advantage of opportunities offered to improve their skills and to advance in the new techniques of their trade.

It is hoped that contractors and labor representatives, members of local joint committees, and all those concerned with promoting, fostering, and improving training will take full advantage of these comprehensive, up-to-date national standards.

The committee points out that related instruction for apprentices must be taught by persons who recognize the value of good teaching techniques and are thoroughly competent in the theory, practices, and skills of the trade.

Also, recognizing problems encountered by local joint committees in formulating and establishing related instruction programs, the national committee suggests that the topical outlines

# CONTENTS

PREFACE .....	iii
ADAPTING NATIONAL STANDARDS TO LOCAL USE .....	1
1. Formation of the Local Carpentry Joint Apprenticeship and Training Committee .....	1
2. Coverage .....	2
3. Duties of the Joint Committee .....	2
4. Filing with Registration Agency .....	3
5. Cooperating Agencies .....	3
6. Definition of Apprentice .....	3
7. Definition of Registration Agency .....	4
8. Qualifications for Apprenticeship .....	4
9. Recruitment, Selection, Employment, and Training .....	4
10. Term of Apprenticeship .....	5
11. Credit for Previous Experience .....	6
12. Related School Instruction .....	6
13. Ratio of Apprentices to Journeymen .....	7
14. Apprenticeship Agreement .....	7
15. Probationary Period .....	8
16. Wages .....	8
17. Periodic Evaluation .....	8
18. Hours of Work .....	8
19. Supervisor of Apprentices .....	9
20. Work Experience .....	9
21. Transfer of Apprentices .....	9
22. Certificate of Completion of Apprenticeship .....	10
23. Safety and Health .....	10
24. Adjusting Differences .....	10
25. Legal Conflict .....	11
26. Registration .....	11
27. Deregistration .....	11
28. Modification of Standards .....	11

FEDERAL LAWS AND REGULATIONS AFFECTING THE EMPLOYMENT OF APPRENTICES .....	12
Wage Determination Regulations .....	12
Veterans Readjustment Legislation .....	12
Wage and Hour Regulations .....	13
Equal Employment Opportunity Legislation and Regulations .....	13
JOINT TRAINING FUNDS .....	15
Legality of Training Funds .....	15
Tax-Exempt Status of the Trust .....	15
APPRENTICESHIP RECORDS .....	16
APPENDIX: SCHEDULES OF WORK EXPERIENCE AND RELATED INSTRUCTION .....	17
Carpenter .....	17
Millwright .....	21
Cabinetmaker .....	23
Piledriver .....	26
Interior Systems Installer .....	29
Floor and Wall Covering .....	33

# **ADAPTING NATIONAL STANDARDS TO LOCAL USE**

## **1. Formation of the Local Carpentry Joint Apprenticeship and Training Committee**

It is recommended that a local joint apprenticeship committee, equally representative of management and labor, be formed to be responsible for adapting the national standards to meet local needs for administering the local apprenticeship program and coordinating it, where desirable, with the apprenticeship systems of other groups in the community.

Where organizations of employers and employees exist, such organizations should appoint equal numbers of their members to serve on the local joint committee.

Where there is no employer or employee organization, a committee may be formed by volunteers who agree to carry out the national standards herein set forth.

The committee shall elect a chairman and a secretary. When the chairman represents the employers, the secretary shall represent the employees, and vice versa. The length of term of office for the chairman and secretary shall be determined by the committee. These officers shall retain the right of voice and vote on all matters pertaining to apprenticeship and training.

In those areas where training in mill, resilient floor, wall covering, and cabinetwork is included in the local standards, it is recommended that these occupations have representation on the joint committee.

Representatives of the Bureau of Apprenticeship and Training, U.S. Department of Labor, and/or the State apprenticeship council (if one exists in the State) and the Division of Vocational and Technical Education, U.S. Department of Education, are available upon request to attend meetings of the joint committee as advisors and consultants on labor standards applicable to apprentices, on the development of administrative procedures for the conduct of apprenticeship and training, and on any problems relating to apprenticeship and training.

## **2. Coverage**

These national standards are applicable to all areas, as minimum standards, where contractual relationships between the membership of the Associated General Contractors of America and/or the National Association of Home Builders of the United States and the United Brotherhood of Carpenters and Joiners of America are in effect.

It is the duty of each local joint committee to identify its area of operation and to assume responsibility for the training of all carpentry apprentices by contractors within such area with whom the local union has bargaining agreements.

## **3. Duties of the Joint Committee**

The local joint committee shall prepare local apprenticeship standards consistent with these national standards, covering such items as a schedule of work experience on the job, provision for related supplemental instruction, provision for reviewing or testing the apprentice's progress both on the job and in related instruction, a progressively increasing schedule of wages for apprentices, the method of selecting apprenticeship and trainee applicants, provision for the adjustment of complaints regarding apprenticeship and training, and the procedure for providing apprentices with certificates of completion.

It shall be the responsibility of the local joint committee to:

- a. Conduct surveys to determine the need for, and the availability of, apprentices in the local area.
- b. Ascertain whether each employer undertaking to train apprentices has the necessary facilities and is performing such construction operations as to assure effective training.
- c. Place each apprentice under agreement.
- d. Assure that apprentices are receiving the necessary on-the-job experience and related technical instruction.
- e. Prepare and submit all reports concerning its apprenticeship program that may be legally required by local, State, or Federal agencies and the respective national organizations.
- f. Notify the appropriate registration agency of all terminations, cancellations, and completions of apprenticeship agreements.
- g. Supervise the enforcement of all provisions of the standards.



#### **4.. Filing with Registration Agency**

As soon as the local apprenticeship standards have been set up, the local joint committee shall file a copy with the appropriate registration agency along with any additional information required by Federal or State laws or rulings affecting apprentices. This procedure is essential to maintain uniformity in basic carpentry apprenticeship standards and records. The joint committee shall also register a copy of each agreement with the registration agency.

#### **5. Cooperating Agencies**

The local carpentry joint apprenticeship and training committee may secure assistance in the formulation and administration of its apprenticeship standards from:

- a. The Associated General Contractors of America, 1957 E Street, NW., Washington, D.C. 20006.
- b. The United Brotherhood of Carpenters and Joiners of America, 101 Constitution Avenue, NW., Washington, D.C. 20001.
- c. The National Association of Home Builders of the United States, 15th and M Streets, NW., Washington, D.C. 20005.
- d. State apprenticeship councils, State labor departments, or State industrial commissions.
- e. The Bureau of Apprenticeship and Training, U.S. Department of Labor, Washington, D.C. 20213.
- f. The Division of Vocational and Technical Education, U.S. Department of Education, Washington, D.C. 20202, responsible for the administration and supervision of Federal funds appropriated for apportionment among the States for vocational education. These funds are available for use in providing instruction to apprentices in related subjects and in setting up classes for journeymen.

#### **6. Definition of Apprentice**

An apprentice is a person who is engaged in learning the trade covered by these standards and who is under a written agreement, hereinafter called an "apprenticeship agreement," with a local joint apprenticeship committee acting as agent of the employer and employee, or with an employer provided the agreement has been approved by the joint committee.

## **7. Definition of Registration Agency**

The term "registration agency," as used herein, shall mean any State apprenticeship agency<sup>1</sup> recognized by the Bureau of Apprenticeship and Training. If no such recognized agency exists in the State, it shall mean the Bureau of Apprenticeship and Training, U.S. Department of Labor.

## **8. Qualifications for Apprenticeship**

Applicants for apprenticeship must normally be at least 17 years of age. They shall satisfy the local joint committee that they have the ability and aptitude to master the rudiments of the trade and have sufficient education to complete satisfactorily the required related instruction.

Applicants shall be physically capable of performing the work of the trade. The method of determining physical capability will be stated in the local program. Local joint apprenticeship committees may establish additional qualifications as desired or deemed necessary. Such qualifications must be specific, clearly stated, and directly related to job performance.

## **9. Recruitment, Selection, Employment, and Training**

The recruitment, selection, employment, and training of apprentices during their apprenticeship shall be without discrimination because of race, color, religion, national origin, or sex. The sponsor will take affirmative action to provide equal opportunity in apprenticeship and will operate the apprenticeship program as required under title 29 of the Code of Federal Regulations, part 30, as amended.

All programs of apprenticeship registered with the Bureau of Apprenticeship and Training on and after January 17, 1964, must include acceptable apprentice selection standards and procedures and a nondiscrimination pledge consistent with the regulation.

In addition, each local joint apprenticeship committee will be required to develop and adopt an affirmative action plan, which must include goals and timetables, where applicable in accordance with the requirements of title 29 CFR, part 30, as amended.

---

<sup>1</sup>Local application of these national apprenticeship and training standards in States having State apprenticeship agencies may require adaptation to meet the standards of apprenticeship in such States. The staffs of the Bureau of Apprenticeship and Training, U.S. Department of Labor, and State apprenticeship agencies are available to advise on such standards.

At least 30 days' public notice will be given in advance of the earliest date for application for admission to the apprenticeship program. Not less than 2 weeks shall be allowed for accepting applications. All applicants placed on a list of qualified eligibles shall be retained on such list subject to selection for a period of 2 years.

Job Corps graduates may receive direct entry into apprenticeship provided that the sponsor and registration agency are in agreement with the criteria as set forth in the U.S. Department of Labor, Bureau of Apprenticeship and Training Circular 74-5, dated December 14, 1973.

Individuals who become members of a local union solely through an organizational effort but are lacking journeymen skills may receive direct entry into apprenticeship provided that the sponsor and the registration agency are in agreement with the criteria as set forth in the U.S. Department of Labor, Bureau of Apprenticeship and Training Circular 79-36, dated August 22, 1979.

Applications from persons completing other bona fide programs sponsored by the signatory organizations to these standards, will be accepted at any time and those meeting local qualifications will be placed on the list of applicants eligible for selection as apprentices. When selected, the applicants will receive appropriate credit on the term of apprenticeship for their previous training.

All qualified applicants shall be rated on the basis of objective standards and tests provided by the National Joint Carpentry Apprenticeship and Training Committee, which permit review after full and fair opportunity for application. Applicants shall be selected in descending order of their ratings, and local programs shall be operated on a completely nondiscriminatory basis.

## **10. Term of Apprenticeship**

The normal term of apprenticeship for the trades covered by these standards, except as otherwise provided for herein, shall be 4 calendar years (approximately 8,000 hours), consisting of eight 6-month periods of reasonably continuous employment during such term, including the probationary period along with required hours of supplemental school instruction.

- a. The local/areawide joint apprenticeship and training committee may accelerate, through the reevaluation process, the advancement of apprentices who show

ability and mastery of the trade to the level for which they are qualified.

- b. The standard term of apprenticeship may be extended by the local/areawide joint apprenticeship committee for 1 year upon satisfactory proof that the apprentice cannot command the minimum scale of wages paid journeymen.

## **11. Credit for Previous Experience**

Apprentice applicants who have had previous creditable training and/or experience in the trade or who have had related instruction may be granted advanced standing on the basis of demonstrated ability and knowledge. When the local committee grants advanced standing to apprentices, they shall be paid the rate of the period to which they are advanced.

## **12. Related School Instruction**

Apprentices employed under these standards shall be required to attend school classes in subjects related to the trade for at least 144 hours per year, each year of their apprenticeship. It is recommended that the apprentice training course of the United Brotherhood of Carpenters and Joiners be used for related instruction by State and local groups.

Where it is impracticable to establish related instruction classes, the local joint committee may utilize the related instruction material of the United Brotherhood of Carpenters and Joiners on a correspondence basis. The responsibility for preparing the correspondence course material is with the local joint apprenticeship committee, in cooperation with local school authorities.

In case of failure without due cause on the part of apprentices to fulfill their obligations as to school attendance and conduct, the local committee shall take necessary disciplinary action.

Where practicable, related training classes should be held during working hours. In no case should the hours of work and related instruction exceed the maximum number of hours prescribed by State or Federal law for persons of the age of apprentices.

Any agreement to pay apprentices for time spent in related instruction shall be in conformance with existing Federal and State laws and local bargaining agreements.

### **13. Ratio of Apprentices to Journeymen**

The ratio of apprentices to journeymen shall be worked out according to local practices or agreements and applicable Federal and State laws and shall be stated numerically in the local standards. The determination should be based on a real study of the present and future local needs for journeymen carpenters, taking into consideration such factors as the present number of journeymen in the trade, average age, anticipated replacement due to retirements, deaths, and departures; and population and industry growth or decline.

### **14. Apprenticeship Agreement<sup>2</sup>**

Each apprentice shall be covered by a written apprenticeship agreement with the local joint committee, acting as the agent of the employer and employee, or an agreement with the employer approved by the local joint committee and registered with the appropriate registration agency.

Each apprenticeship agreement entered into shall contain:

- a. The names and signatures of the contracting parties.
- b. The place and date of birth of the apprentice.
- c. The time at which the apprenticeship shall begin and the time of its duration, together with any credit granted on such term of apprenticeship.
- d. A statement that the apprentice shall be taught the carpentry trade.
- e. A statement making the terms and conditions of the local standards a part of such apprenticeship agreement.

Apprenticeship agreement forms may be obtained from the Associated General Contractors of America, 1957 E Street, NW., Washington, D.C. 20006; The United Brotherhood of Carpenters and Joiners of America, 101 Constitution Avenue, NW., Washington, D.C. 20001; the National Association of Home Builders of the United States, 15th and M Streets, NW., Washington, D.C. 20005; or the Bureau of Apprenticeship and Training, U.S. Department of Labor, Washington, D.C. 20213.

---

<sup>2</sup>Some State apprenticeship agencies require the use of their own apprentice agreement forms. In such instances, the agreement forms may be obtained from the staffs of either the State apprenticeship agencies or the Bureau of Apprenticeship and Training, U.S. Department of Labor.

## **15. Probationary Period**

Apprentices employed under these standards will be subject to a probationary period to be determined by the local joint committee but not to exceed 90 days of reasonably continuous employment. During this period, the termination or cancellation of the apprenticeship agreement may be made without cause by the local joint committee at the request of either party to the agreement. After the probationary period, the committee may cancel the agreement for due cause, such as lack of progress or interest.

The registration agency shall be advised of all cancellations and terminations of apprenticeship agreements.

## **16. Wages**

A wage schedule for apprentices shall be included in the local standards. It shall be established on the basis of a progressive percentage of the journeyman's wage rate, preferably at 6-month intervals, and average not less than approximately 50 to 75 percent of the journeyman's rate over the apprenticeship term.

## **17. Periodic Evaluation**

Shortly before the expiration of each 6-month period, the local joint apprenticeship committee shall evaluate the progress of all apprentices reflective both of their progress on the job and their progress in the related training experience.

## **18. Hours of Work**

The hours of work for apprentices shall be the same as those for journeymen in the trade covered by the local standards and in conformity with State and Federal laws. In assigning work to apprentices, however, due consideration shall be given to the variety of operations necessary to develop their trade skills.

No apprentice shall be allowed to work overtime if it interferes with attendance at related instruction classes.

Apprentices absent from the service of the employer through their own fault shall make up all such time before being advanced to the next period of apprenticeship.

## **19. Supervisor of Apprentices**

The employer shall designate a particular person, who may be the superintendent, a supervisor, or a journeyman, to be known as the "supervisor of apprentices." With the advice and assistance of the local joint committee, the supervisor of apprentices shall be responsible for the apprentices' work experience, on the job, their attendance at related classes, and the recording of same on record forms adopted for this purpose. It shall be the duty of the supervisor of apprentices to see that these record forms are complete in every detail and are forwarded to the local committee quarterly. The local committee shall keep a master record of the apprentices' work experience and related instruction. All records shall be maintained for at least 5 years, and made available to the registration agency upon request.

## **20. Work Experience**

Apprentices shall be taught the use, care, and effective and safe handling of tools and apparatus commonly used in the carpentry trade. They shall be given work experience and training necessary to develop the skills, theory, and practice of carpentry. They shall also perform all duties commonly related to carpentry apprenticeship. (See the recommended work-experience schedules in appendixes A, B, C, D and E.)

Apprentices must be prepared to furnish their own handtools as recommended by the local joint committee.

## **21. Transfer of Apprentices**

It shall be the duty and responsibility of the local joint committee to provide, insofar as possible, continuous employment for all apprentices. Where it is impossible for one employer to provide the diversity of experience necessary to give the apprentice all-round training and experience in the various branches of the trade or where the employer's business is of such character as not to permit reasonably continuous employment over the entire period of apprenticeship, the local joint committee may arrange to transfer the apprentice to another employer, who shall assume all the terms and conditions of the local standards.

## **22. Certificate of Completion of Apprenticeship**

Immediately after apprentices have been granted their Journeyman status by committee action, they shall be furnished a certificate attesting to the satisfactory completion of their apprenticeship. Where such certificates are provided by the registration agency, the local committee may request issuance of a certificate by that agency.

## **23. Safety and Health**

Apprentices shall be advised as to the great need for preventing accidents. They shall be given instruction and training with respect to accident prevention and safe construction methods consistent with all Federal and State laws on safety and health. They shall be taught that accident prevention is very largely a matter of education, vigilance, and cooperation and that they should strive at all times to conduct themselves in their work in such a manner as to insure their own safety and that of their fellow workers.

The employer shall instruct the apprentice in safe and healthful work practices and shall insure that the apprentice is trained in facilities and other environments that are in compliance with either the occupational safety and health standards promulgated by the Secretary of Labor under Public Law 91-596, dated December 29, 1970, or State standards that have been found to be at least as effective as the Federal standards.

## **24. Adjusting Differences**

In case of dissatisfaction between the employer and the apprentice, either party has the right and privilege of appeal to the local joint committee for such action and adjustment of such matters as come within these standards. The decision of the local committee shall be final on questions involving local apprenticeship standards.

Either party may request the registration agency to interpret any provision of the apprenticeship standards over which there may be a controversy.

Apprentices shall be instructed as to the appropriate program to receive, process, and make disposition of complaints.



## **25. Legal Conflict**

In the event any part of these standards may be declared illegal, the balance of the standards shall remain in full force and effect.

## **26. Registration**

The registration of these standards by the Bureau of Apprenticeship and Training (BAT) certifies that the standards conform to the labor standards which the U.S. Department of Labor believes are necessary to safeguard the welfare of apprentices in our industry. The Labor Department's general labor standards for apprenticeship programs are set forth in part 29 of title 29 of the Code of Federal Regulations.

## **27. Deregistration**

This program may be deregistered upon the voluntary action of the sponsor, by the sponsor's request for cancellation of the registration. The program may also be deregistered, for reasonable cause, by the Bureau of Apprenticeship and Training of the U.S. Department of Labor when BAT institutes formal deregistration proceedings in accordance with the provisions of part 29 of title 29 of the Code of Federal Regulations.

Upon deregistration or voluntary cancellation of the program, the sponsor will inform each apprentice, within 15 days, of the deregistration or cancellation, and the effect of such action. This notification will conform to the requirements of 29 CFR 29.7.

## **28. Modification of Standards**

These national standards of apprenticeship may be modified at any time by the national joint apprenticeship committee. Such modification shall be submitted to the Bureau of Apprenticeship and Training, U.S. Department of Labor for approval.

No modification or change in local standards shall alter conditions of apprenticeship already in force without the consent of all parties involved.

# **FEDERAL LAWS AND REGULATIONS AFFECTING THE EMPLOYMENT OF APPRENTICES**

## **Wage Determination Regulations (federally financed and assisted construction)**

The Secretary of Labor, through the office of the Wage-Hour Administrator of the U.S. Department of Labor, predetermines the prevailing wages for construction mechanics and laborers employed on Federal or federally assisted construction projects. (Details of these regulations will be found in part 1 and part 5, title 29 subtitle A, Code of Federal Regulations, covering labor standards provisions applicable to public contracts.)

Local joint apprenticeship committees should advise all contractors participating in the local apprenticeship program that, in case they are awarded a contract for a federally financed or assisted construction project, their apprentices must be employed under a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, U.S. Department of Labor, or if no such recognized agency exists in the State, with the Bureau of Apprenticeship and Training, U.S. Department of Labor, and further, that apprentices so employed must be individually registered with the appropriate registration agency.

The contractor must present written evidence of such registration, including evidence of the established ratios and wage rates applicable in the project area, to the contracting officer for acceptance.

## **Veterans Readjustment Legislation (Public Law 90-77, 90th Congress)**

A veteran of at least 181 days of continuous active duty, any part of which occurred after January 31, 1955, or a veteran who was released from active duty after January 31, 1955, for a service-connected disability is eligible to pursue on a full-time basis an approved program of apprenticeship and receive a monthly training assistance allowance.

The apprenticeship program must meet the standards of the Bureau of Apprenticeship and Training, U.S. Department of

Labor, and be approved by the appropriate State veterans approving agency.

Under the provisions of the veterans readjustment legislation, joint apprenticeship committees may be recognized as training establishments.

### **Wage and Hour Regulations (ruling concerning payment for time spent by apprentices in related instruction)**

The Fair Labor Standards Act requires that each employee, not specifically exempted, who is engaged in interstate commerce or in the production of goods for such commerce receive the statutory minimum wage and that no employee (including an apprentice) may be employed for more than 40 hours a week without receiving at least time and one-half of his regular rate of pay for the overtime hours.

As an enforcement policy, time spent in an organized program of related supplemental instruction by apprentices working under bona fide apprenticeship programs may be excluded from working time if the following criteria are met: (1) The apprentice is employed under a written apprenticeship agreement or program which substantially meets the basic standards of the Bureau of Apprenticeship and Training, U.S. Department of Labor, and (2) such time does not involve production work or performance of the apprentice's regular duties. If the above criteria are met, the time spent in such related supplemental training shall not be counted as hours worked unless the written agreement specifically provides that it is hours worked. The mere payment or agreement to pay for time spent in related instruction does not constitute an agreement that such time is hours worked.

### **Equal Employment Opportunity Legislation and Regulations**

The Civil Rights Act of 1964, title VII, prohibits discrimination in all phases of employment, including apprenticeship, because of race, color, religion, sex, or national origin. It applies to employers, employment agencies, labor organizations, joint apprenticeship committees, and, under the 1972 amendments, Federal agencies.

Detailed information regarding application of title VII of the Civil Rights Act may be obtained from the regional offices of the Equal Employment Opportunity Commission.

Information on title 29, Code of Federal Regulations, part 30, as amended, may be obtained from the Bureau of Apprenticeship

and Training, U.S. Department of Labor, or State apprenticeship agencies.

**NOTE:** It is suggested all local joint committees contact their State agencies for applicable laws affecting apprenticeship, with special attention to latest revisions.

# **JOINT TRAINING FUNDS**

## **Legality of Training Funds**

Training funds for use in defraying the cost of apprenticeship or other training programs to which employers contribute are authorized under the Labor-Management Reporting and Disclosure Act of 1959, which amends section 302 of the Labor-Management Relations Act of 1947. Such funds must be established in the form of a trust; the trustees must be equally representative of the employers and employees (this may be the joint apprenticeship committee); and the basis on which payments to the trust are to be made must be detailed in a written agreement with the employer, including provision for an annual audit of the trust. Those persons (trustees) responsible for the custody or control of the trust funds must be bonded.

Where a trust is established, a clause should be included in the trust agreement to the effect that: (1) The trusteeship is a nonprofit organization; (2) no part of the net earnings will inure to any private individual or member; and (3) in the event of dissolution of the trust, the accrued moneys and other assets will be disposed of in the manner set forth. (They can be apportioned to those who paid into the fund, donated to a charitable or educational organization, or contributed to the labor organization.)

## **Tax-Exempt Status of the Trust**

Training trust funds are considered to be tax exempt by the Internal Revenue Service under section 501(c)5 of the Internal Revenue Code of 1954. To obtain this exemption, the trustees must file form 1024 with the appropriate District Director of Internal Revenue. In submitting form 1024, include with it a copy of the trust agreement and apprenticeship program. After the tax-exempt status of the trust has been determined, each year thereafter the trustees shall make a return on form 990 in order to maintain this exemption.

Employer contributions to the training trust fund are deductible as ordinary and necessary expenses in the conduct of a business under section 162(a) of the Internal Revenue Code.

## APPRENTICESHIP RECORDS

It is essential that a current, accurate, and complete record be kept of each apprentice, showing work progress, attendance at related instruction, and joint apprenticeship committee actions. All records shall be maintained for at least 5 years.

## APPENDIX SCHEDULES OF WORK EXPERIENCE AND RELATED INSTRUCTION

### A. CARPENTER

860.381-022<sup>1</sup>

#### Work-Experience Schedule

The following schedule is an example of the type of work experience and training considered necessary to develop a skilled and productive worker in the carpentry trade. Within the limits of basic trade requirements, the schedule is adaptable to local conditions.

	Approximate hours
a. Layout .....	500
Batterboards, partitions, doors and windows, box-out in concrete walls.	
b. Form building .....	1,200
Build and place straight concrete forms, irregular concrete forms, concrete forms for stairways and floors, walls, and columns.	
c. Rough framing .....	1,200
Floor, wall, roof, stair, scaffolding, etc., on both house and heavy construction. Roof covering.	
d. Outside finishing .....	800
Application of cornice and wall trim. Set door and window frames. Application of trimming fixtures.	
e. Inside finishing .....	1,500
Application of door and window trim. Fit and sand doors and windows. Application of base- boards and moldings. Construction and setting cases, wardrobes, stairwork. Flooring. Applica- tion of hardware and fittings to exterior and interior of building, doors, and windows.	
f. Care and use of tools and woodworking machinery .....	500

<sup>1</sup> Code number for listing in *Dictionary of Occupational Titles*, 4th ed. (Washing-  
U.S. Department of Labor, Employment and Training Administration, 1977).

g. Welding .....	500
h. Plastics and resilients .....	300
i. Acoustics and drywall .....	1,000
1. Ceilings:	
Layout, cutting, assembly, and installation of all materials and component parts.	
(a) Hangers, channels, furring and backing boards.	
(b) Bars: main tees, cross tees, splines.	
(c) Stiffeners and braces.	
(d) Ceiling angles or moldings.	
(e) Finish ceiling materials.	
(f) Items of local practices.	
2. Walls and partitions:	
Layout, cutting, assembly, erection, and/or application of all materials and component parts.	
(a) Floor and ceiling runners.	
(b) Studs, stiffeners, bracing, fireblocking.	
(c) Resilient and furring channels.	
(d) Layout, framing enclosing, and trimming of: doorframes, window frames, vents, light wells, and other openings.	
(e) Wall angles and moldings.	
(f) Studless and laminated installations.	
(g) Thermal and sound insulation.	
(h) Installation of backing and finish materials.	
(i) Fireproofing of columns, beams, and chases.	
(j) Items of local practices.	
j. Miscellaneous .....	500
Safety, scaffolding, walkways, shoring, sheds, protection, etc.	
Total .....	8,000



## **Related Instruction**

- a. Accident prevention, first aid, safety hazards, State and Federal safety codes and regulations. Safety courses per the Occupational Safety and Health Administration, U.S. Department of Labor.
- b. Ethics and history of the trade.
- c. Tools and materials of the trade.
- d. Review and application of basic mathematics.
- e. Elementary blueprint reading and freehand sketching.
- f. Foundations: types and layout.
- g. Rough framing: types, plumbing, leveling, and alignment.
- h. Exterior finishes: kinds and use.
- i. Interior finishes: kinds and use.
- j. Roof framing: all types and combinations.
- k. Stairbuilding and finishing.
- l. Cabinetmaking: on-job site and installation.
- m. Reinforced concrete form construction: materials, types, devices, and their use.
- n. Heavy timber construction, framing.
- o. Welding: gas and arc, vertical, horizontal, and overhead.
- p. Acoustics and drywall: types, layout, cutting, and installation.
- q. Plastics and resilients: types and their use, layout, cutting, welding, and installing.

## **Related Training Material**

Visual instructional material as prepared by the Apprenticeship and Training Department of the United Brotherhood of Carpenters and Joiners of America for the implementation of the Performance Evaluated Training System. As resource material the following texts are offered:

- Unit 1. Tools, Materials, Ethics, and History of the Trade.
- Unit 2. Foundations.
- Unit 3. Rough Framing.
- Unit 4. Exterior Finish.
- Unit 5. Roof Framing.
- Unit 6. Interior Finish.
- Unit 7. Stairbuilding.
- Unit 10. Concrete Construction.
- Unit 12. Parts 1 and 2. Blueprint Reading.
- Mathematics for Carpenters
- Rigging
- Cutting and Welding

Metal Studs and Drywall  
Safety  
Blueprint Plans A, B, C, and D.

### **Reference Materials**

Associated General Contractors: "Safety Training Course for Construction Supervisors," and "Manual of Accident Prevention in Construction."

Manufacturers' manuals, brochures, and pamphlets on types and installation of acoustics, drywall, resilients, and plastics. Generally free upon request.

National Wood Council brochures.

Federal and State safety codes and orders.

## B. MILLWRIGHT

638.281-018<sup>2</sup>

### Work-Experience Schedule

The following schedule is an example of the type of work experience and training considered necessary to develop a skilled and productive worker in the millwright trade. Within the limits of basic trade requirements, the schedule is adaptable to local conditions.

	Approximate hours
a. Work experience in the use of tools (hand, power, bench, and machine) .....	1,500
b. Work experience in machine installation and alignment .....	2,000
c. Work experience in use of equipment (rigging, welding, precision, etc.) .....	1,500
d. Work experience in the use of optical instruments and laser .....	1,500
e. Work experience in blueprint reading .....	700
f. Work experience in welding (arc, MIG, oxy-acetylene, TIG, plastic) .....	800
Total .....	8,000

### Compliance With These National Standards

Apprentices and employers agree to abide by the policies outlined in the National Carpentry Standards and this appendix. Signing a copy of the local agreement binds the parties to compliance.

### Related Instruction

- Accident prevention, first aid, safety hazards, State and Federal safety codes and regulations. Safety courses per the Occupational Safety and Health Administration.
- Tools of the trade: hand and power; history of the trade.

<sup>2</sup> footnote 1.

- c. Materials and mathematics.
- d. Construction practices: machine installation, alignment, assembly, and protection.
- e. Heavy equipment: receiving, inspection, and setting.
- f. Use of optical instruments: leveling and alignment of heavy equipment.
- g. Welding: gas, arc, MIG, TIG, plastic, brazing, and soldering.
- h. Blueprint reading and layout.
- i. General maintenance and practices.

### **Recommended Texts**

United Brotherhood of Carpenters and Joiners of America instructional material for millwrights:

- Unit 1. Safety: Introduction to construction millwrighting.
- Unit 2. Mathematics and Workbook.
- Unit 3. Part 1. Monorails.
- Unit 3. Part 2. Conveyors.
- Unit 4. Installation and Maintenance of Machinery.
- Unit 5. Blueprint Reading (Includes Blueprint).
- Unit 6. Optical and Laser Alignment.
- Unit 7. Cutting and Welding.
- Unit 8. Rigging.
- Unit 9. Turbines and Generators/Reactors.
- Unit 10. Shaft Alignment.
- Unit 11. Layout.

### **Reference Materials**

Associated General Contractors: "Safety Training Course for Construction Supervisors," and "Manual of Accident Prevention in Construction."

Federal and State safety codes and orders.

## C. CABINETMAKER

660.280-010 <sup>3</sup>

### Work-Experience Schedule

The following schedule is an example of the type of work experience and training considered necessary to develop a skilled and productive worker in the cabinetmaker trade. Within the limits of basic trade requirements, the schedule is adaptable to local conditions.

	Approximate hours
a. Sharpen and use handtools .....	500
b. Work from stock bills and drawings .....	500
c. Use of power equipment, cutoff saws, table saws, jointers, routers, planers, shapers, sanders, etc...	1,500
d. Grinding knives and filing saws .....	500
e. Laying, matching, and cutting veneers .....	300
f. Dressing and preparing material for assembly .....	500
g. Gluing stock .....	200
h. Layout work for milling and general trim-saw work from stock bills and details .....	1,000
i. Sand moldings, glue flat work and squares, clean for finish .....	200
j. Assemble doors, drawers, skeleton frames, fit and hang doors and drawers, fit and apply moldings, match veneers .....	800
k. Assemble and install cabinets, built-ins, paneling, etc .....	1,500
l. Independent layout, machining, and assembly of cabinets and built-ins .....	500
<b>Total .....</b>	<b>8,000</b>

See footnote 1.

## **Compliance With These National Standards**

Apprentices and employers agree to abide by the policies outlined in the National Carpentry Standards and this appendix. Signing a copy of the local agreement binds the parties to compliance.

## **Related Instruction**

- a. Accident prevention, first aid, safety hazards, State and Federal safety codes and regulations. Safety courses per the Occupational Safety and Health Administration, U.S. Department of Labor.
- b. Ethics and history of the trade.
- c. Tools: hand and power, their use and care.
- d. Materials: types, when and where used.
- e. Mathematics, basic.
- f. Safety (given throughout the course).
- g. Exterior finish.
- h. Interior finish.
- i. Cabinet, casework, and built-ins, acceptable standards (workmanship, materials).
- j. Setup, operation, and maintenance of (power) mill equipment.
- k. Blueprint reading and estimating.
- l. Shop drawings and cutting lists.
- m. Stairbuilding.
- n. Employer-employee relations.

## **Recommended Texts**

United Brotherhood of Carpenters and Joiners of America apprenticeship manuals for carpenters:

- Unit 1. Tools, Materials, Ethics, and History of the Trade.
- Unit 4. Exterior Finish.
- Unit 6. Interior Finish.
- Unit 7. Stairbuilding.
- Unit 8. Cabinetmaking (Mill).
- Unit 9. Mill Work.
- Unit 12. Blueprint Reading and Estimating.
- Mathematics for Carpenters.
- Training for Safety.
- Safety.
- Blueprint Plans A, B, and C.

## **Reference Materials**

Associated General Contractors: "Safety Training Course for Construction Supervisors" and "Manual of Accident Prevention in Construction."

Wood Products Institute handbooks.

National Wood Council brochures.

Federal and State safety codes and orders.

## D. PILEDRIVER<sup>4</sup>

### Work-Experience Schedule

The following schedule is an example of the type of work experience and training considered necessary to develop a skilled and productive worker in the piledriver trade. Within the limits of basic trade requirements, the schedule is adaptable to local conditions.

	Approximate hours
a. Tools and materials .....	160
b. Form work for piles caps .....	300
c. Basic timberwork .....	300
d. Oxygen-acetylene welding .....	40
e. Piledriving equipment .....	300
f. Rigging .....	400
g. Advanced timberwork .....	300
h. Arc welding and cutting .....	60
i. Special fields of the trade .....	800
1. Cofferdams .....	(350)
2. Sheet piling .....	(350)
3. Transit and level .....	(30)
4. Maintenance and care of outboard motors, pumps, and light plants .....	(70)
j. Driving of piles .....	400
k. Signaling .....	200
l. Bridge construction .....	700
m. Driving .....	40
Total .....	4,000

### Compliance With These National Standards

Trainees and employers agree to abide by the policies outlined in the National Carpentry Standards and this appendix. Signing of the local agreement binds the parties to compliance.

<sup>4</sup>It is understood that piledriver trainees will not be registered as apprentices, nor will such trainees receive certificates of completion of apprenticeship.



## Related Instruction

- a. Accident prevention, first aid, safety hazards, State and Federal safety codes and regulations. Safety courses per the Occupational Safety and Health Administration, U.S. Department of Labor.
- b. Mathematics, basic.
- c. Blueprint reading.
- d. Piledriver equipment and materials:
  1. Piledrivers.
    - (a) Floating of water drivers.
      - (1) Construction.
      - (2) Rigging: anchors, lines, buoys, hammer line, pile line, jet rigging, lead rigging, deck winches, and rigger heads.
    - (b) Skid drivers: construction, rigging, skidways.
    - (c) Crane with swinging leads.
    - (d) Swinging leads from marine stiffleg derrick.
  2. Hammers and leads (drop, steam, pneumatic, diesel):
    - (a) Hammer rigging.
    - (b) Lead construction (stationary, swinging, pendulum, false, pile extractors).
  3. Tools: drilling and setting with long augers.
  4. Piling:
    - (a) Material: wood; treated wood; steel H, tube and sheet; concrete, cutoffs.
    - (b) Driving of material: driving to bearing, jetting.
  5. Rigging: building sections, stressed beams, knots, hitches, and splices (manila and wire), stiff legs, gin pole, shear legs, mobile cranes, righting cap-sized drivers.
  6. Excavations and shoring excavations.
  7. Form building.
  8. Construction and releasing of false work.
  9. Construction of coffer dams: steel sheet piling, wood construction, sealing of coffer dams, removal.
  10. Construction of wood trestles: truss types, heavy framing.

11. Constructing bridges—overpasses, underpasses: abutments, sills, columns, vertical curves and supers, beams (cast in place; precast; prestressed and poststressed).
12. Dock building: wood, concrete.
13. Float and pontoon.
14. Safety course per the Occupational Safety and Health Administration, U.S. Department of Labor.
15. Welding and burning.
16. Construction of engines, jets, jet pumps, bilge pumps, etc.

### **Recommended Texts**

United Brotherhood of Carpenters and Joiners of America apprenticeship manuals for carpenters:

- Unit 1. Tools, Materials, Ethics, and History of Trade.
- Unit 2. Foundations.
- Unit 10. Concrete Construction.
- Unit 12. Part 2. Blueprint Reading.
- Piledriving.
- Cutting and Welding.
- Rigging.
- Mathematics for Carpenters.
- Safety.
- Blueprint Plan D.

## E. INTERIOR SYSTEMS INSTALLER<sup>5</sup>

### Work-Experience Schedule

The following schedule is an example of the type of work experience and training considered necessary to develop a skilled and productive worker in the installer interior systems trade. Within the limits of basic trade requirements, the schedule is adaptable to local conditions.

Layout, cutting, assembly, erection, and/or application of all materials and component parts.

Approximate  
hours

- a. Floor and ceiling runners.
- b. Studs, stiffeners, bracing, fireblocking.
- c. Resilient and furring channels.
- d. Layout, framing, enclosing, and trimming of:  
doorframes, window frames, vents, shaft wells,  
light wells, and other openings.
- e. Wall angles and moldings ..... 1,600
- f. Studless and laminated installations.
- g. Thermal and sound insulation application and  
component assemblies.
- h. Suspension systems.
- i. Installation of backing board and finish drywall  
materials.
- j. Fireproofing and columns, beams, and chase.
- k. Masonry furring ..... 1,100
- l. Single and multiple laminations direct to masonry.
- m. Welding and crimping.
- n. Prefabricated assemblies.
- o. Movable or demountable assemblies.

<sup>5</sup>It is understood that interior systems trainees will not be registered as apprentices, nor will such trainees receive certificates of completion of apprenticeship.

- p. Bankrail, cornices, glazed and full height systems.
- q. Chalk board, black board, and veneered systems... 1,000
- r. Store fixture partitions.
- s. Laboratory and structural partitioning.
- t. Items of local practices ..... 600

Total ..... 4,000

## Compliance With These National Standards

Trainees and employers agree to abide by the policies outlined in the National Carpentry Standards and this appendix. Signing of the local agreement binds the parties to compliance.

### Related Instruction

- a. Accident prevention, first aid, safety hazards, State and Federal safety codes and regulations. Safety courses per the Occupational Safety and Health Administration, U.S. Department of Labor.
- b. History and ethics of drywall industry.
- c. The trainee and his trade.
- d. Basic mathematics.
- e. Workman's legal rights and benefits.
- f. Use of tools—care and safety.
- g. Materials, handling and care.
- h. Basic drywall application.
- i. Basic blueprint familiarization.
- j. Framing with metal.
- k. Drywall systems.
- l. Safety.
- m. Testing review.

## Acoustical Interior Systems (Walls and Ceilings)

### Work-Experience Schedule

The following schedule is an example of the type of work experience and training considered necessary to develop a skilled and productive worker in the acoustical interior systems trade. Within the limits of basic trade requirements, the schedule is adaptable to local conditions.

Layout cutting, assembly, erection, and/or application of all materials and component parts.

	Approximate hours
a. Scaffold building: .....	300
Safety, material handling, tools—care and use.	
b. Hanger suspension installation: .....	1,000
1. Layout and installation of inserts.	
2. Dropping through metal pan forms.	
3. Tying off to re-bar.	
4. Tying off to metal decking.	
5. Tying off to bar joints.	
6. Fastening to side of wood ceiling joists.	
7. Screw-hood installation to wood ceiling joists.	
8. Eye-pin fastened to concrete with power-actuated tool.	
9. Wire fastened to "I" beams with tap-on clips.	
10. Installation of extra support such as carrying channel, etc.	
c. Ceiling suspension systems (components):	
1. Exposed grid system of metal tee members .....	900
2. Semiexposed grid systems.	
3. Fire-rated exposed grid systems.	
4. Fire-rated semiexposed grid systems.	
5. Environmental and luminous systems.	
6. Concealed systems requiring carrying channels.	
7. Concealed systems directly hung from hanger wires.	
8. Accessible concealed systems .....	800
9. Z-bar installation.	
10. T and T-bar installation.	
11. H and T-bar installation.	
12. C-bar installation.	
13. Wood suspension systems.	
d. Acoustical tile and panel installation: .....	500
1. Cemented to gypsum board.	
2. Cemented to plaster.	

3. Cemented to concrete.	
4. Nailed to wood furring strips.	
5. Screwed to wood furring strips.	
6. Installed in concealed grid systems.	
7. Installed in exposed grid systems.	
8. Installed in semiexposed systems.	
9. Installation of asbestos panels.	
10. Installation of metal and metal-clad tiles and panels.	
11. Access openings.	
e. Modular, baffle systems and environmental systems.....	200
f. Layout and use of water levels and other leveling devices.....	200
Total .....	4,000

### Compliance With These National Standards

Trainees and employers agree to abide by the policies outlined in the National Carpentry Standards and this appendix. Signing of the local agreement binds the parties to compliance.

### Related Instruction

- a. Accident prevention, first aid, safety hazards, State and Federal safety codes and regulations. Safety courses per the Occupational Safety and Health Administration, U.S. Department of Labor.
- b. History of acoustical industry.
- c. The trainee and his trade.
- d. Basic mathematics.
- e. Workman's legal rights and benefits.
- f. Use of tools—care and safety.
- g. Materials, handling and care.
- h. Basic acoustical application and sound control.
- i. Basic blueprint familiarization.
- j. Acoustical systems (air zone and baffles).
- k. Demountable and movable partitions.
- l. Relation of acoustical application to other trades, electrical, mechanical, etc.
- m. Framing with wood, metal, and drywall systems.

## F. FLOOR AND WALL COVERING

864.481-010<sup>b</sup>

### Work-Experience Schedule

The following schedule is an example of the type of work experience and training considered necessary to develop a skilled and productive worker in the floor and wall covering trade. Within the limits of basic trade requirements, the schedule is adaptable to local conditions.

	Approximate hours
1. Carpeting	
a. Handling of materials .....	200
Conventional carpet, high density foam-backed, rubber-backed, padding, other	
b. Surface preparation .....	250
Wood, concrete, walls, other	
c. Layout .....	300
Estimating/planning, workroom, jobsite, patterned, nonpatterned, other/	
d. Seaming .....	400
Preparation/methods, thermoplastic (heat), sewing, wet, other	
e. Installation of padding .....	200
Stapling, gluing, taping, other	
f. Installation of fastening devices .....	200
Tackless strip, tacking strip, other	
g. Installation of carpet .....	900
Conventional (stretching), glue down, taping, other	
h. Finishing .....	100
Metals/vinyls, base, other	
i. Special installations .....	200
Walls, ceilings, furniture, other	

<sup>b</sup>See footnote 1.

j. Stair installations .....	300
Straight, winders, floating, other	
k. Safety .....	200
Removal, existing materials, adhesives, power equipment and hand tools	
l. Tool and equipment maintenance .....	100
m. General maintenance and repairing .....	150
2. Hard Surface	
a. Handling of materials .....	250
Sheet goods, tile, underlayments, other	
b. Surface preparation .....	500
Wood, concrete, walls, drywall, plaster, etc., other	
c. Layout .....	500
Sheet goods, nonpatterned, pattern matching, custom insets; tile, square installation, diagonal, patterns, other	
d. Fitting material .....	1,000
Knifing, direct scribing, pattern scribing, other	
e. Methods of application .....	500
Adhesives, stapling, taping, nailing, other	
f. Seaming methods .....	500
Double cutting, underscribing, sealing/welding, other	
g. Finishing .....	250
Cove base, base shoe, metals/vinyls, other	
h. Miscellaneous .....	500
Stairs, treads, risers, stringers; walls; other	
i. Safety .....	250
Adhesives; removal, existing materials, asbestos-backed, other; power equipment and hand tools	
j. Care and use of tools, equipment; tool maintenance.	100
k. General maintenance and repairs .....	150
Total .....	8,000



## Compliance With These National Standards

Apprentices and employers agree to abide by the policies outlined in the National Carpentry Standards and this appendix. Signing a copy of the local agreement binds the parties to compliance.

### Related Instruction

- a. Accident prevention, safety hazards, State and Federal codes and regulations; certification per the Occupational Safety and Health Administration, U.S. Department of Labor.
- b. Ethics and history of the trade.
- c. Tools and materials of the trade; uses and kinds.
- d. Review and application of basic mathematics/mensuration.
- e. Elementary blueprint reading.
- f. Sketching, estimating and planning: scaled drawings, working drawings, material planning.
- g. Material handling: carpet, sheet goods, tile, underlayments, etc.
- h. Surface preparation: wood, concrete, walls, etc.
- i. Layout: carpet, sheet goods, tile, patterns and custom.
- j. Installation techniques: carpet, sheet goods, tile, special materials; cutting, fitting, scribing, troweling and stretching.
- k. Finishing techniques: carpet, sheet goods, tile and custom installations.
- l. Special applications: floors, walls, ceilings, furniture, etc.
- m. Seaming: preparation; carpet, sheet goods and special materials.

### Recommended Texts

United Brotherhood of Carpenters and Joiners of America apprenticeship manuals for carpenters:

#### *Floor covering*

- Unit 1. Resilient Flooring.
- Unit 2. Carpet.
- Unit 12. Part 1. Blue Print Reading.
- Unit 12. Part 2. Blue Print Reading.

Basic Mathematics.

Unit on Safety.

### ***Transparencies***

Carpet.

Resilient Flooring.

### **Reference Materials**

Duffin, D. J.; *The Essentials of Modern Carpet Installation.*

Armstrong Cork Company; *Installation Manual Resilient Flooring.*

Current publications from floor covering manufacturers.

Suggested: Area development; job sheets, information sheets, and assignment sheets.